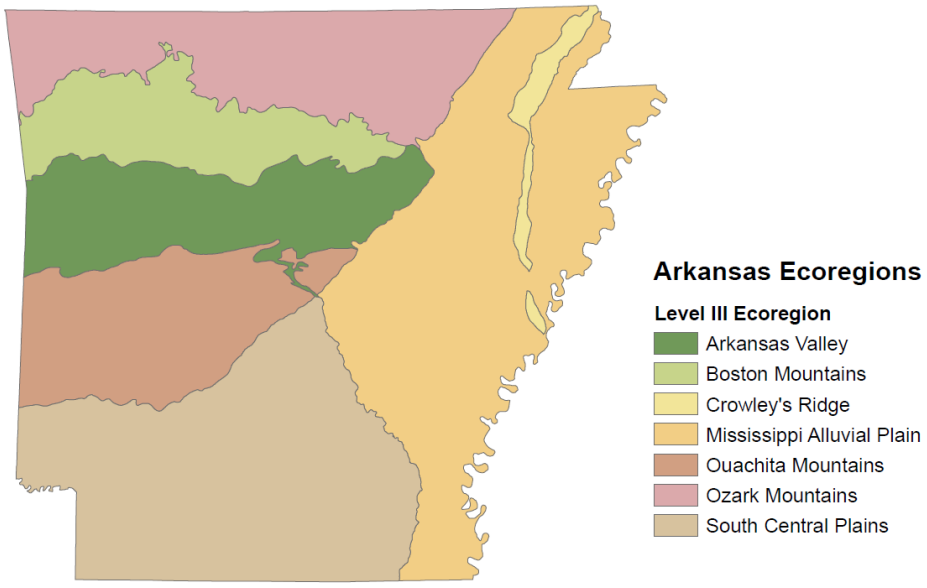
Arkansas

Forest Health Highlights for 2018

Forest Resource Introduction

Arkansas's forests cover 19 million acres, which is more than 56% percent of the state's land area.
The majority of the state's forested land, some 13.1 million acres, is in non-industrial private ownership, while approximately 2.5 million acres is national forest. Scenic beauty is showcased in the Ozark, Boston, and Ouachita Mountain ranges. Tourism and outdoor recreation opportunities are plentiful within the state's diverse landscape. Major forest types in the state include oak-hickory, loblolly-shortleaf pine, oak-pine, and bottomland hardwood. Loblolly pine dominates the south central plains and it is the most abundant tree species by volume, and shortleaf pine follows second in statewide volume estimates. The most abundant hardwood species, listed in order of greatest volume, are white oak, sweetgum, post oak, northern red oak, black oak, and southern red oak. According to recent forest inventory estimates, volume growth is exceeding the volume harvested, and this is true for both hardwood and pine volumes. This fact makes Arkansas forests a prime resource for forest wood products.



Aerial Detection Survey Summary

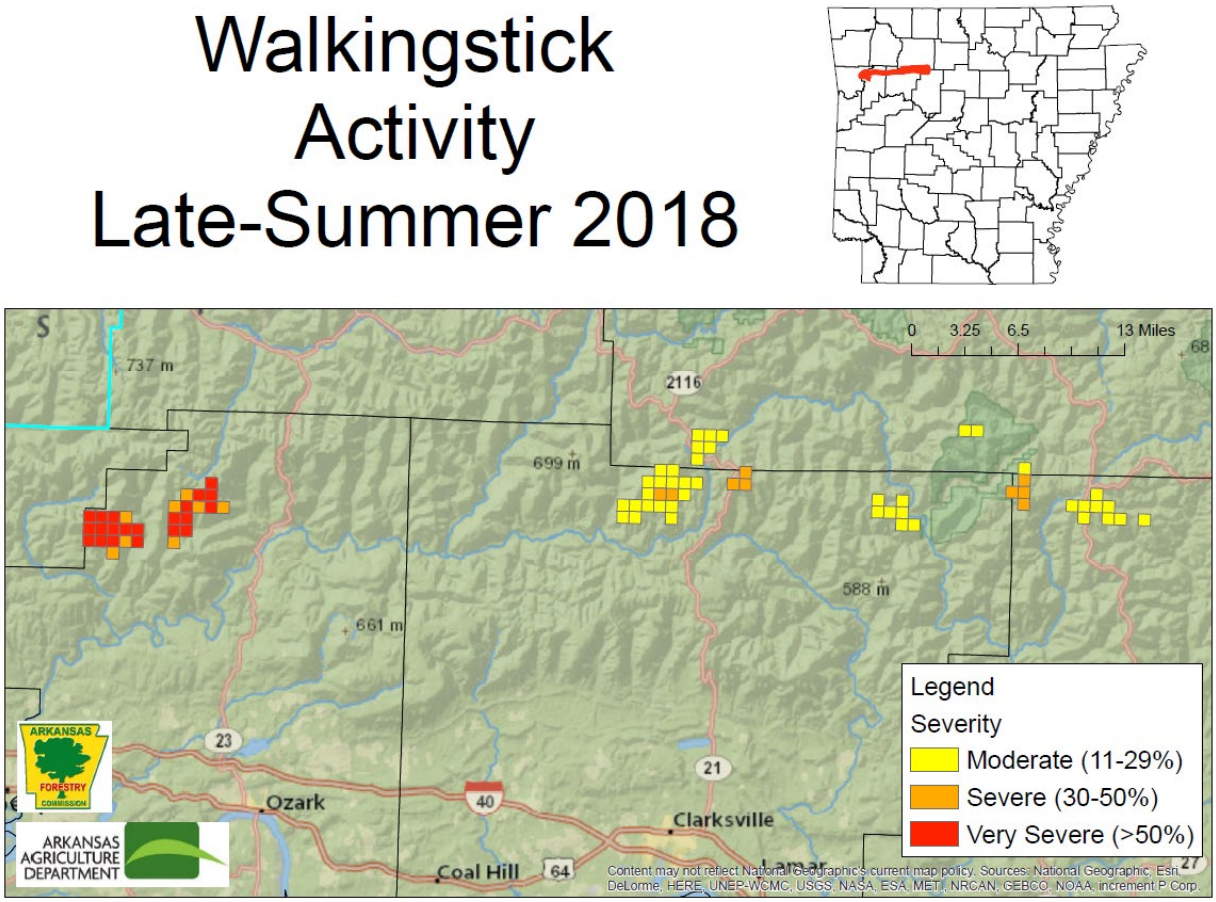
The Arkansas Forestry Commission (AFC) began utilizing the tablet-based Digital Mobile Sketch-Mapper in 2017 (a system delivered and supported by the Forest Service – Forest Health Assessment & Applied Sciences Team). With this convenient tool, the Forest Health Specialist was able to record forest disturbance data during nine specific aerial surveys in 2018. Point and polygon data were easily mapped and shared. A new ability to record forest pests with a grid overlay (instead of drawing individual polygons) proved useful for widespread outbreaks such as mortality caused by Ips bark beetle, jumping oak gall crown discoloration, and walkingstick defoliation that covered the landscape. AFC encourages the use of this system to document and map forest health disturbances.

The Forest Health Specialist trained four AFC personnel to use the DMSM system. AFC is working toward statewide aerial survey capability by multiple trained individuals. Ground-truthing techniques were also tested with select individuals in 2018. When aerial survey captures data, it is equally important to visit recorded areas on the ground and properly describe the damage agent.

New to 2018, the Forest Health Specialist added an unmanned aerial system (UAS or drone) as a method to assess forest and insect issues from the ground. This tool is expected to be useful in 2019 to add another meaningful perspective to insect and disease monitoring practices. See pictures of the AFC Bluff City Seed Orchard taken by the drone below.

Common Walkingstick

Walkingstick, *Diapheromera femorata,* defoliation was extreme in some areas of the Ozark Mountains, having increased in abundance for a second consecutive year. Heavy defoliation was reported in September, around White Rock Mountain and highways 7 (near Dear) and 21 (near Salus) in the Ozark National Forest. Severe defoliation appeared to be restricted to high elevation forests. Population growth may have been attributed to the warm and wet conditions in the previous winter and the potential lack of control provided by recognized natural enemies. An aerial survey was conducted to map the most severely affected locations. Note: the defoliation was not limited to the mapped area.



Update on Jumping Oak Gall of White Oak

Though it was considered an unsightly outbreak in 2017, damage caused by jumping oak gall had substantially declined in 2018. The galls of this Cynipid wasp, *Neuroterus* sp., can be found on white oak throughout much of the Ozark and Boston Mountains. The pinhole sized galls are made on the underside of leaves and crown discoloration symptoms occur May through June. The galls fully develop in May and drop to the ground to overwinter in the duff layer.

Gypsy Moth Survey

A gypsy moth detection program in Arkansas is a multi-agency effort led by the Arkansas State Plant Board (ASPB). The Arkansas Forestry Commission assisted in 2018 by placing 268 traps (approximately 4 traps per county). Nearly 5,000 traps were placed by all agencies combined. No gypsy moth suspects were captured in AFC traps.

Southern Pine Beetle (SPB) Survey

An outbreak of SPB has **not** occurred in Arkansas or the states west of the Mississippi for nearly two decades. In AR, spring trap catches subsided around 2005 and now traps rarely have a positive catch. In spring 2017, two SPB were captured in Ashley County. In spring 2018, 26 were captured in Ashley County and one was captured in Columbia County. The traps were baited with the aggregation pheromone frontalin, a monoterpenes solution, and a long-ranged attractant called endobrevicomin.

AFC also set up nine fall season SPB traps for the first time. Zero were captured.

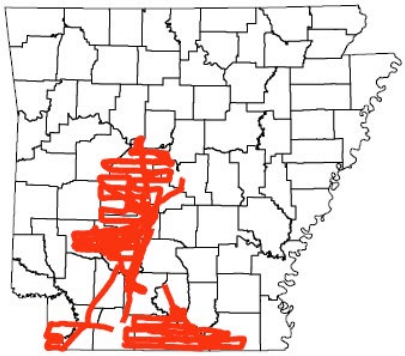
Ips Pine Engraver Beetles

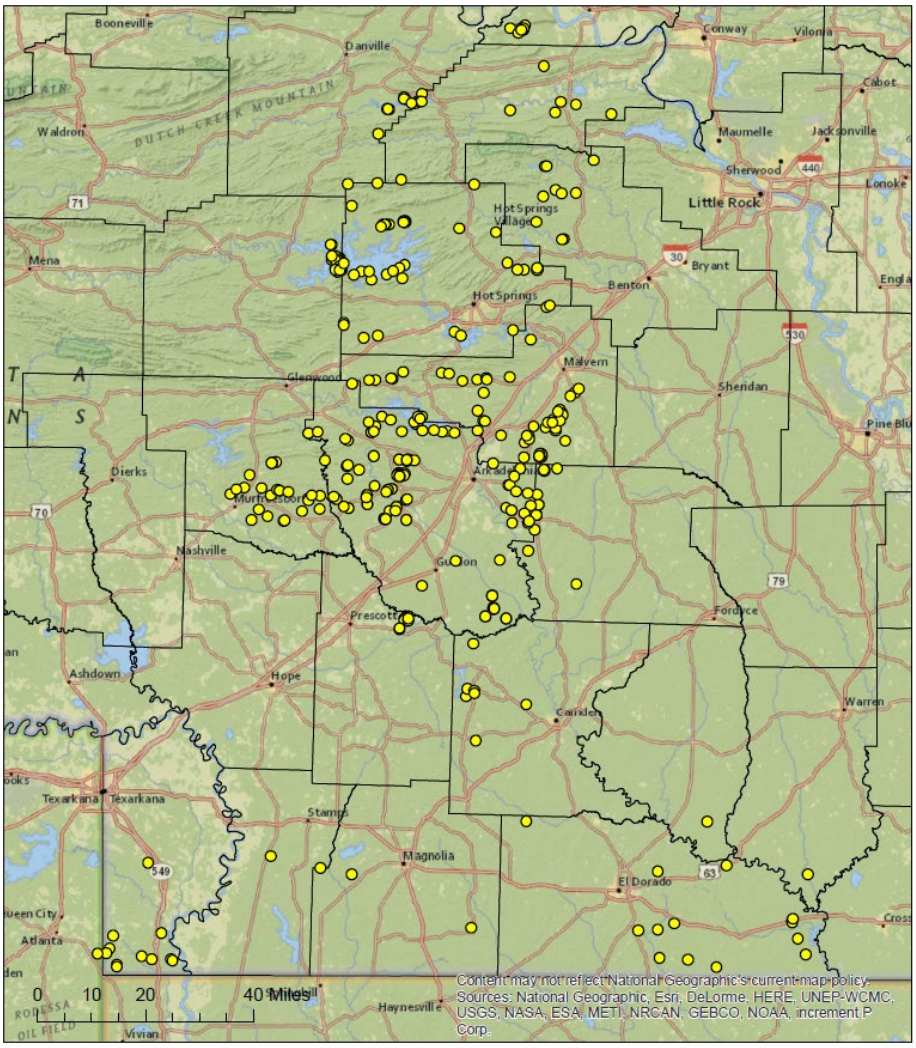
Widespread damages occurred in November of 2017 when Ips caused pine mortality in central Arkansas counties. High frequencies of infestations occurred in Clark and Pike counties at that time. A few infestations were greater than 50 trees and occurred in a pattern of radially-spreading spots of mortality. The alarming nature of the spots prompted a public communications campaign to raise awareness on identifying the infestations and explaining how Ips bark beetles contribute to tree mortality. However, this outbreak subsided quickly when winter began and did not continue to affect stands in 2018. Regular rainfall improved the growing condition for pines statewide. Noticeable losses did occur around Lake Hamilton during late-summer months, which impacted lakeside homeowners. Instances of Ips damage recorded by aerial survey between November 2017 and October 2018 are displayed in the following map.

Ips Bark Beetle Activity Nov 2017 to Oct 2018

ARKANSAS FORESTRY COMMISSION

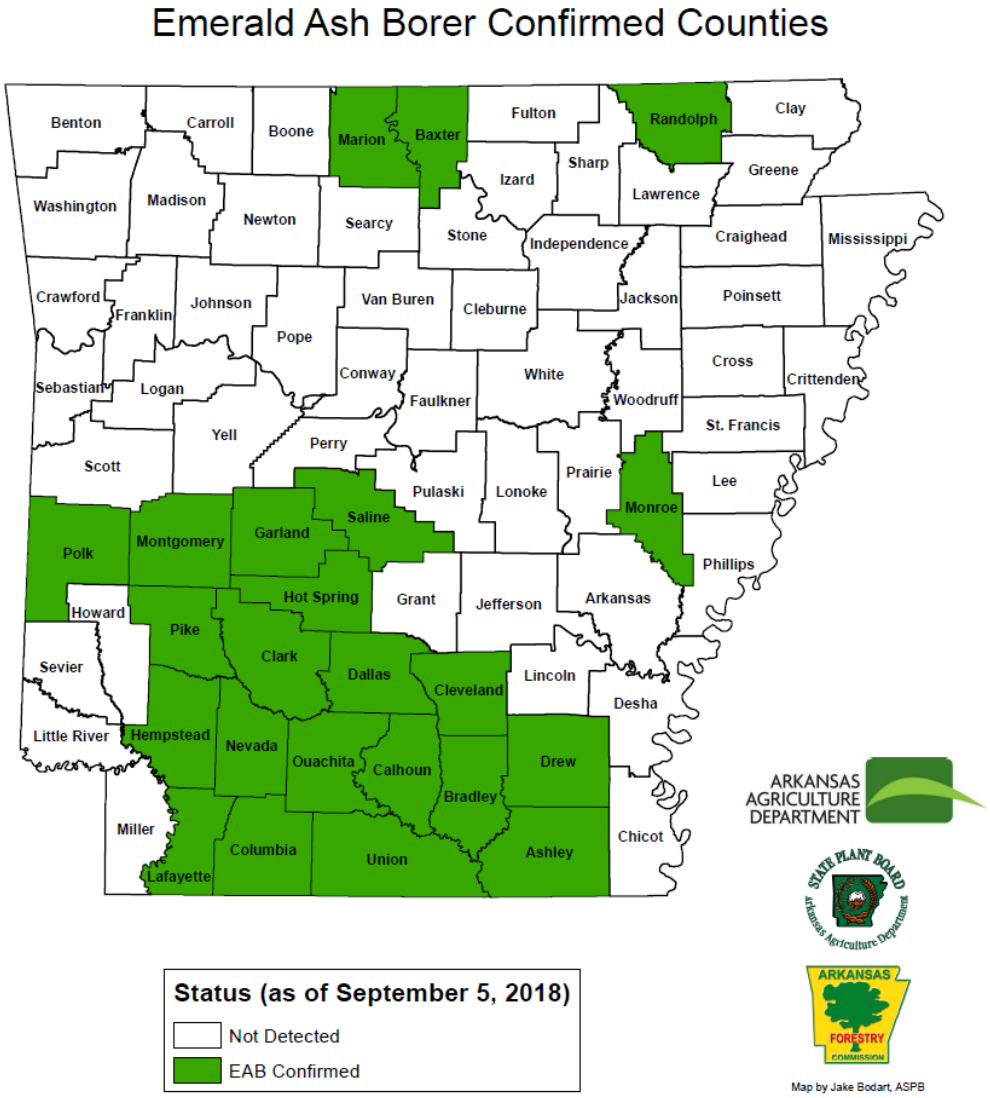
ARKANSAS AGRICULTURE DEPARTMENT





Emerald Ash Borer

While the ASPB and APHIS-PPQ are responsible for confirmation and quarantine regulation, multiple agencies are assisting with the detection and monitoring of EAB. AFC investigates reported sightings across the state and uses visual surveys and a limited supply of panel traps. Five new counties were confirmed in 2018, bringing the total to 23 counties in Arkansas.

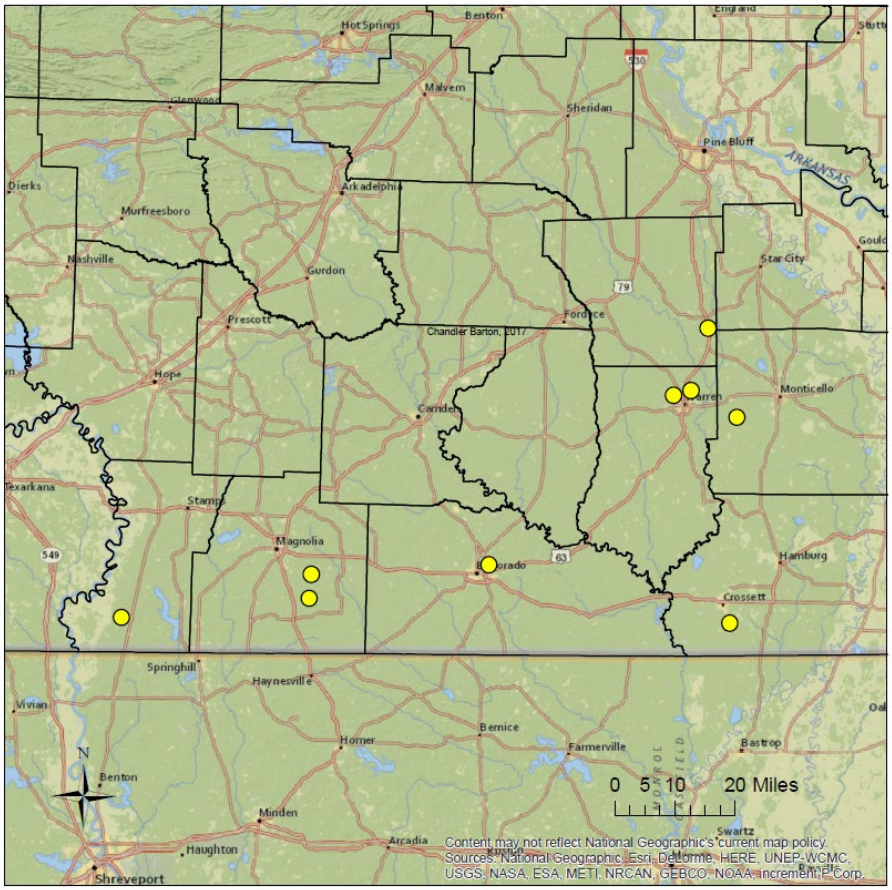


Redbay Ambrosia Beetle and Laurel Wilt Disease

Laurel wilt disease (LWD) was discovered in Arkansas in December of 2015 on symptomatic sassafras trees. The beetle that transmits the fungus, redbay ambrosia beetle (RAB) (*Xyleborus glabratus*), was also identified. Redbay trees are rare in Arkansas, but sassafras is a suitable host for the invasive disease and beetle. Sassafras is infrequent in southern Arkansas (statewide, it makes up less than one percent of tree volume in size classes greater than five inches), however it is common in the Ozark Mountains of northern Arkansas and Missouri. According to Forest Inventory and Analysis estimates, seedling and sapling size sassafras is more abundant in the Ozark highlands than anywhere else in the country. LWD has been confirmed in six Arkansas counties.

AFC is participating in a laurel wilt monitoring study. Permanent plots are being established to measure disease progression and beetle presence. Three such plots were set up in 2018.

Sassafras with Laurel Wilt Disease as of 2018



For More Information, Please Contact:

Chandler Barton, Forest Health Specialist
1 Natural Resources Drive
Little Rock, AR 72205
(501) 297-1581
chandler.barton@agriculture.arkansas.gov

The mission of the Arkansas Forestry Commission is to protect Arkansas's forests, and those who enjoy them, from wildland fire and natural hazards while promoting rural and urban forest health, stewardship, development, and conservation for all generations of Arkansans. To report wildfires, call 1-800-468-8834. To report prescribed burns, call 1-800-830-8015. For more information about the Arkansas Forestry Commission, visit www.forestry.arkansas.gov.